AREA 10 PROPOSED PLAN PUBLIC MEETING

July 7, 2009

7 PM

Lake City Army Ammunition Plant (LCAAP)

Independence, MO

Cabrera Services

RADIOLOGICAL • ENVIRONMENTAL • REMEDIATION

AGENDA

- Meeting Objective
- Area 10 Location and Background
- CERCLA Process Completed at Area 10
  - Overview and Historical Work Completed
  - Current Status
  - Clean-up Goals
- Removal Action Implementation
  - Process
  - Waste Quantities
  - Confirmation Sampling
  - Current Status
- Preferred Final Remedy
- Site Closure Documents
- Summary and Questions

Meeting Objective

- Obtain public input on the Army, USEPA, and MDNR decision to take No Further Action with Land Use Controls at the Area 10 site based upon clean-up completed over the past year

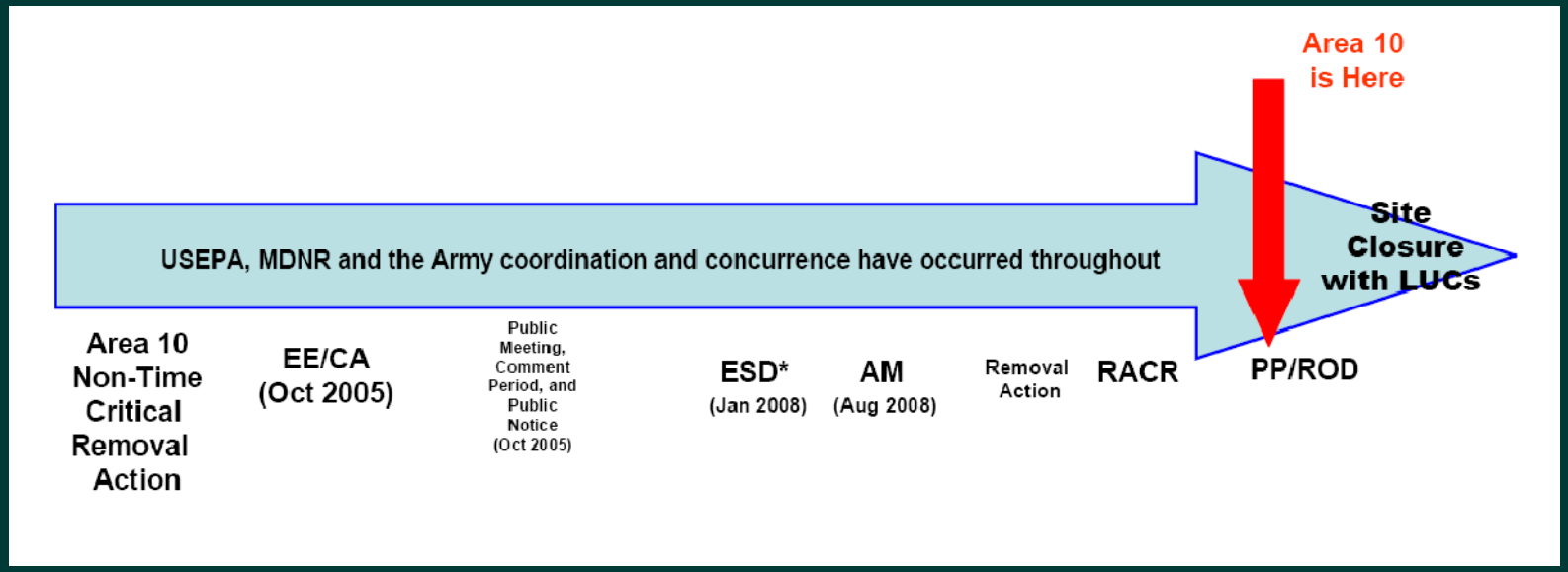
- For Area 10, previously the public has commented on:
  - The best method to clean-up the site (Oct 2005)
  - The appropriate clean-up levels (Jan 2008)

Area 10 Location and Background

- Comprised of approx. 6 acres in the east-central portion of the plant
- Located in the secured, active range area

- During the 1960's and 1970's the plant developed, test-fired, and demilitarized munitions that contained licensed radioactive source material
- Residual waste from these operations (spent bullet catcher sand, metal debris, munitions constituents, and potential unexploded ordnance was deposited at Area 10

CERCLA PROCESS
Completed at Area 10



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CERCLA PROCESS
SITE INVESTIGATIONS

- **1990** – Installation-Wide Remedial Investigation (EA)
- **1994** – Site Characterization to Support Decommissioning Activities (ATG)
- **1999** – Waste Characterization (IT and USACE)
- **2004** – Investigation of Additional COPCs and Impacted Media (Cabrera)
- **2007** – Final Groundwater Sampling (Cabrera)

CERCLA PROCESS TREATABILITY STUDIES

- **1996** – Soil Washing Treatability Study (COGNIS)
- **2000** – Physical Separation and Stabilization Treatability Study (IT and USACE)
- **2005** – Field Treatability Study (Cabrera)

CERCLA PROCESS
PARTIAL SOURCE REMOVAL

- **1998-1999** – Decommissioning Activities (ATG)
  - Purpose was to address licensed radioactive material
  - Removed 30,000 cubic feet of most highly contaminated waste
  - Waste characterization indicated hazardous lead concentrations in addition to depleted uranium (DU) contamination

CERCLA PROCESS
EE/CA

- Area 10 Sand Piles Engineering Evaluation/Cost Analysis (EE/CA) (2005)
  - Identified Nature and Extent of Contamination
    - lead and DU as contaminants of concern
    - Sand Pile footprint and adjacent soils are the extent of contamination
  - Presented streamlined risk assessment
  - Evaluated removal action alternatives
  - Recommended current removal action approach
- Public meeting held in October 2005; no public comments received

CERCLA PROCESS
ACTION MEMORANDUM

- Area 10 Sand Piles Action Memorandum (AM) (2008)
  - Specified final lead and DU cleanup criteria
  - Documented regulatory approval of the non-time critical removal action approach
- Public meeting held in January 2008; single public comment received was in support of the recommended approach

REMOVAL ACTION CLEANUP GOALS

- Total Lead: 1,197 milligram per kilogram (mg/kg)
  - Installation-wide, risk-based cleanup goal established for industrial land use scenario
- DU: 35 picocuries per gram (pCi/g)
  - Army's Nuclear Materials License (No. SUC-1380) criterion for unrestricted release
  - Specified cleanup goal equates to an isotopic concentration of 29.2 pCi/g uranium-238

REMOVAL ACTION IMPLEMENTATION

- Conducted April 2008 to February 2009
- Addressed total lead and DU in sand and underlying/adjacent soils
- Waste disposal considerations:
  - Unexploded ordnance (UXO) and munitions constituents (MC) – potential safety hazards
  - Hazardous concentrations of lead in sand – prohibited from land disposal

REMOVAL ACTION IMPLEMENTATION (cont'd)

- Radiological surveys/sampling of sand pile material performed in 1-foot depth increments
- Mechanical screening of sand to separate UXO and MC from munitions debris
- Treatment of screened sand to stabilize hazardous concentrations of lead
- Sorting, packaging, and incineration of UXO and MC (on-going)
- Final status surveys and confirmation sampling of residual soils underlying and adjacent to sand pile

REMOVAL ACTION WASTE QUANTITIES

- 58,291 tons – treated non-radioactive sand to Johnson County Landfill
- 99 tons – radioactively contaminated sand packaged for shipment to US Ecology
- 1,087 tons – oversized material to sorting area for removal of UXO and MC (765 tons still to sort)

POST-REMOVAL ACTION RESIDUAL SOIL SAMPLING

	Total Lead (mg/kg)	Uranium-238 (pCi/g)
No. of Samples	157	154
Minimum Conc.	9.8	1.23
Maximum Conc.	1,110	4.84
Cleanup Goal	1,197	29.2

SUMMARY OF CURRENT SITE STATUS

- Removal action resulted in permanent removal of lead and DU contamination from Area 10
  - Residual lead concentrations acceptable for industrial land use
  - Residual DU concentrations acceptable for unrestricted land use
- No longer any potential for contaminants to migrate beyond the boundaries of Area 10 or to other media (e.g., surface water or groundwater)
- No current or future risk to human health or environment under industrial exposure scenario

PREFERRED FINAL REMEDY

- No further remedial action required
- No groundwater monitoring necessary
  - Previous groundwater monitoring events indicated lead and uranium were below EPA screening levels
  - Sand pile material has been removed and no longer poses a potential source of contamination to groundwater

PREFERRED FINAL REMEDY (cont'd)

- Land Use Controls
  - Institutional controls will be implemented to ensure site remains limited to industrial land use
  - Five-year reviews will be conducted to ensure land use controls remain in place

CERCLA SITE CLOSURE DOCUMENTS

- Proposed Plan (PP)
  - Subject to 30 day public review and comment period (underway now June 24 – July 24)
- Record of Decision (ROD)
  - Will document the approved final remedy and address public comments received on this Proposed Plan and will be signed by the Army, USEPA, and MDNR

SUMMARY AND QUESTIONS

- All lead and DU have been removed to the clean-up goals agreed to by the Army, USEPA, and MDNR
- Following the public comment period, a Record of Decision will be signed by all parties including public input
- LUCs will ensure industrial land use for Area 10
- Questions?